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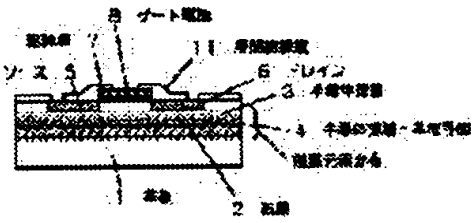
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(54) SEMICONDUCTOR THIN FILM AND MANUFACTURE THEREOF

(57)Abstract:
PROBLEM TO BE SOLVED: To form a crystalline silicon film at a low temperature by forming an atomic layer and a layer, having a peak concentration of a catalyst element around an interface between a substrate and a semiconductor thin film, and subsequently made to contain the catalyst element in and outside the semiconductor thin film.
SOLUTION: On a glass substrate 1, a coating 2 made of a material such as silicon oxide is formed through sputtering method, and then a semiconductor thin film 3 such as a crystalline silicon film is formed thereon. Subsequently, around an interface 4 between the substrate 1 and the semiconductor thin film 3, an atomic layer is formed, which contains a catalyst element for accelerating the growth of a crystal. Furthermore, a layer having a peak concentration of the catalyst element is formed around the interface 4 between the substrate 1 and the semiconductor thin film 3, and the catalyst element is contained in and outside the semiconductor thin film 3. Therefore, it is possible to manufacture a semiconductor thin-film device, such as a low-temperature forming thin- film transistor having high performance.



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